REMARKS

Claims 1 through 27 and new Claims 28 and 29 are pending in the application.

Claim 1 has been amended to reflect advantageous food casings in which the reinforcement has a weight of 3 to 400 g/m^2. Support for this amendment can be found in the Application-as-filed, for example in Claim 5.

Claim 2 has been amended to emphasize that the consolidated nonwoven is fabric. Support for this amendment can be found in the Application-as-filed.

Claim 5 has been canceled, as its subject matter has been incorporated into Claim 1.

Claim 25 has been amended to reflect advantageous food casings in which the flat fibrous material has a weight of 3 to 1000 g/m^2. Support for this amendment can be found in the Application-as-filed, for example on Page 4, line 33 through Page 5, line 1.

Claim 27 has been amended to reflect advantageous food casings in which the casing has a weight of 10 to 200 g/m^2. Support for this amendment can be found in the Application-as-filed, for example on Page 10, lines 12 through 13.

Claims 28 and 29 have been added to complete the record for examination and highlight advantageous embodiments of the invention.

Claim 28 is directed to advantageous embodiments in which the fibrous support web is formed from cotton fiber, viscose staple, silk, polyester, polyamide, polyolefin, polyvinyl acetate, polyacrylonitrile, polyvinyl chloride or mixtures or copolymers thereof. Support for this amendment can be found in the Application-as-filed, for example on Page 4, lines 15 through 23.

Claim 29 is directed to advantageous embodiments in which the flat fibrous material is self-supporting. Support for this amendment can be found in the Application-as-filed, for example on Page 4, lines 31 through 33.

Reexamination and reconsideration of this application, withdrawal of all rejections, and formal notification of the allowability of the pending claims are earnestly solicited in light of the remarks which follow.

Section 112 Rejection

Claim 6 stands rejected over the recitation "consisting of." Applicants respectfully submit that sufficient support exists within the Application-as-filed for protein "consisting of" the enumerated proteins. In particular, the Examiner's attention is directed to Page 5, lines 26 through 31 (noting various suitable proteins, including gelatin, collagen, casein, gluten, zein, ardein, pea protein, cottonseed protein and fish protein). The Application-as-filed clearly conveys to one skilled in the art that Applicants invented the claimed subject matter; i.e. a food casing coating containing the recited proteins. Consequently, Applicants respectfully submit that the Examiner has failed to provide a prima facie case of failure of written description. Applicants further respectfully submit that it is a long standing doctrine of patent law that Applicants are entitled to claim less than that to which they are entitled. Accordingly, Applicants respectfully request withdrawal of the foregoing rejection.

Claim 27 stands rejected over the recitation "coating weight." Claim 27 has been amended to reflect advantageous food casings in which the casing has a weight of 10 to 200 g/m^2. As noted above, support for the foregoing amendment can be found in the Application-as-filed. Accordingly, Applicants respectfully request withdrawal of the foregoing rejection.

The Claimed Invention is Patentable

in Light of the Art of Record

Claims 1 through 4, 6, 8 through 15, 19 and 23 through 26 stand rejected over WIPO Publication WO 98/34490, whose United States equivalent is United States Patent No. 6,902,783 (US 783). Claims 1 through 8, 10 through 17 and 19 through 27 stand rejected over US 783 in view of United States Patent No. 3,494,772 (US 772) to Noel et al. Claim 9 stands rejected over US 783 in view of United States Published Application No. 2002/0064580 (US 580) to Gord et al. Claim 18 stands rejected over US 783 in view of United States Patent No. 5,955,126 (US 126) to Jon et al.

It may be useful to briefly consider the invention before addressing the merits of the rejection.

Cellulosic food casings have long been known in the art. Processes by which to form cellulosic food casings generally involve extruding a solution of either viscose-cellulose or NMMO-cellulose. Unfortunately, the formation of cellulosic food casings is both expensive and environmentally challenging.

Altogether unexpectedly, Applicants have found food casings which can be produced simply, inexpensively, and in an environmentally friendly manner.

Applicants have more particularly determined that casings formed from fibrous support webs that have been coated with a film-forming-protein composition can be produced simply and inexpensively. The coating may optionally include up to a maximum of 5% by weight cellulosic filler. If the film-forming protein is water-soluble, the coating also incorporates at least one compound to crosslink the protein.

In advantageous embodiments, the fibrous support web has a weight of 3 to 400 g/m^2, as recited in Claim 1 as-amended.

In particularly advantageous embodiments, the fibrous support web is a consolidated nonwoven or spunbonded fabric, a woven fabric, loop-formingly knitted fabric, loop-drawingly knitted fabric, laid fabric or a porous film, as recited in Claim 2.

In expedient embodiments, the fibrous support web can be formed from cotton, viscose staple, silk, polyester, polyamide, polyolefin, polyvinyl acetate, polyacrylonitrile, polyvinyl chloride or mixtures or copolymers thereof, as recited in newly added Claim 28.

In especially beneficial aspects, the fibrous material reinforcing the inventive casings is self-supporting, as reflected in newly added Claim 29.

The cited references do not teach or suggest the claimed invention.

Applicants particularly respectfully submit that none of the cited references teaches or suggests casings formed from fibrous support webs having a weight of up to 400 g/m^2 (Claim 1), much less such fibrous support webs having a weight of up to 1000 g/m^2 (Claim 25), as recited in the claims as-amended.

Applicants respectfully reiterate that US 783 is directed to extruded, edible films formed from thermoplastic biopolymers, such as thermoplastic starch. (Col. 1, lines 52 – 67; Col. 2, lines 38 – 41 and Col. 4, lines 26 - 30). To strengthen the films, the biopolymer blends may further include wood pulp or the like, presumably in edible quantities. (Col. 3, lines 44 – 46). The wood pulp fibers of US 783 have a length of at most 5 mm, preferably at most 2 mm. (Col. 3, lines 48 – 50).

US 783, directed to extruded films, does not teach or suggest the claimed food casings formed from coated reinforcement.

Applicants further respectfully reiterate that US 783, solely directed to edible film, does not teach or suggest the inventive food casings in which the coated reinforcement is a fibrous web. Applicants more specifically respectfully reiterate that the amount of fibers within US 783 and the fiber length must be chosen in such as way that the shaped body is still edible. Consequently, the amount of the fibers must be kept rather low and the length of the fibers must be sufficiently short. The extremely short fibers of US 783 can not form the recited fibrous web, in contrast to the urgings of the outstanding Office Action on Page 5, Ref. No. 12. Applicants further respectfully reiterate that to modify US 783 so as to incorporate the recited fibrous web would render US 783 unsuitable for its intended purpose as an edible film.

Applicants further respectfully submit that "web" is a well known term of art referring to materials having a pattern or structure. Hence the claimed "fibrous web" refers to fibers having a pattern or structure. In contrast, the fillers within the films of US 783 would not be expected to provide a pattern or structure sufficient to constitute a "web."

And US 783 most certainly does not teach or suggest such advantageous food casings incorporating a fibrous web having a weight of either up to 400 g/m^2 or up to 1000 g/m^2, as further recited in Claims 1 and 25, respectively.

Applicants further respectfully submit that US 783 does not teach or suggest casings incorporating the advantageous fabrics recited in Claim 2. Nor can the filled films of US 783 be construed to include a consolidated nonwoven fabric, as recited in Claim 2 as-amended, in contrast to the urgings of the outstanding Office Action on Page 5, Ref. No. 12. Applicants respectfully submit that "fabric" is well known in the art to refer to structures formed primarily from fibers. The casings of US 783 are formed primarily from thermoplastic biopolymers. Applicants respectfully submit that to modify US 783 so as to be formed primarily from its wood pulp filler would render it unfit for its intended use as an edible film.

US 783 similarly can not teach or suggest advantageous embodiments in which the fibrous support web is formed from the enumerated materials of newly added Claim 28. In that regard, Applicants respectfully submit that fabrics formed from the foregoing materials clearly would not be edible.

US 783, directed to extruded edible films, likewise can not teach or suggest expedient casings in which the fibrous material reinforcing is self-supporting, as provided in newly added Claim 29. In that regard, Applicants respectfully submit that such self-supporting fibrous material likewise clearly would not be edible.

Accordingly, Applicants respectfully reiterate that the claimed invention is patentable in light of US 783, considered either alone or in any combination with the remaining art of record.

US 772 does not cure the deficiencies in US 783.

US 772 is also directed to edible sausage casings. US 772 is more particularly directed to edible sausage casings formed form a "continuous phase" of edible alginate containing a "network" of edible collagen fiber. (Col. 1, lines 47 – 52) US 772 expressly teaches that casings formed from collagen alone are "tough to eat," and hence unsuitable. (Col. 2, lines 43 – 46). The impetus of US 772 is thus casings formed from alginate compositions, with US 772 preferably including up to 60 % alginate. (Col. 2, lines 8 – 13). The collagen fibers of US 772 are up to 25 mm long and initially have a diameter of up to about 0.1 mm. (Col. 2, lines 62 – 67). US 772 teaches that the proportion of the alginate to fibrous collagen can range up to 90:10. (Col. 2, line 71 – Col. 3, line 1).

US 772, solely directed to edible film, likewise does not teach or suggest the claimed food casings formed from a coated reinforcement, much less a coated web.

US 772, requiring fibrous collagen, further does not teach or suggest the recited film-forming protein. Nor would there have been any motivation to have included the recited film-forming protein, as US 772 expressly teaches that casings formed from collagen are "tough to eat."

US 772, teaching more tender casings formed from alginate, also fails to teach or suggest the inventive food casing coatings further containing a maximum of 5 % by weight of cellulosic filler.

And US 772 most certainly does not teach or suggest such advantageous food casings incorporating a fibrous web having a weight of up to 400 g/m^2, as further recited in Claim 1. In contrast to the urgings of the outstanding Office Action on Page 8, Ref. No. 24, US 772 does not include a "reinforcing layer" and thus could not "optimize" its weight. US 772 instead merely incorporates collagen fiber as a filler into an alginate matrix.

Nor does US 772 teach or suggest the advantageous fabrics of Claim 2. US 772 instead merely generically refers to its collagen fibers as forming a "network" within a continuous phase of alginate.

US 772 likewise fails to teach or suggest such advantageous food casings in which the fibrous web has a weight of up to 1000 g/m^2, as recited in Claim 25.

US 772 similarly does not teach or suggest advantageous embodiments in which the fibrous support web is formed from the enumerated materials of newly added Claim 28. In that regard, Applicants respectfully reiterate that fabrics formed from the foregoing materials clearly would not be edible.

US 772 likewise can not teach or suggest expedient casings in which the fibrous material reinforcing is self-supporting, as provided in newly added Claim 29. In that regard, Applicants respectfully submit that such self-supporting fibrous material likewise clearly would not be edible.

Accordingly, Applicants respectfully reiterate that the claimed invention is patentable in light of US 772, considered either alone or in any combination with the remaining art of record.

There would have been no motivation to have combined US 783 and US 772. However, even if US 783 and US 772 were combined (which Applicants did not), the claimed invention would not have resulted.

The combination, solely directed to edible films, simply does not teach or suggest the claimed food casings formed from a coated reinforcement, much less a coated web.

The combination further does not teach or suggest such coated webs in which the coating contains a film-forming protein and a maximum of 5 % by weight of cellulosic filler. US 783 merely teaches extrusion of any of a number of biopolymers that can contain up to 30 % filler. US 772 require a specific fibrous protein within alginate films.

And the combination most certainly does not teach or suggest such advantageous food casings in which the fibrous web has a weight of up to 400 g/m^2, as further recited in Claim 1.

Nor does the combination teach or suggest the advantageous fabrics of Claim 2. US 783 merely generically teaches the incorporation of fillers. US 772 simply notes that its collagen fibers form a "network."

The combination likewise fails to teach or suggest such advantageous food casings in which the fibrous web has a weight of up to 1000 g/m^2, as recited in Claim 25.

The combination similarly can not teach or suggest advantageous embodiments in which the fibrous support web is formed from the enumerated materials of newly added Claim 28.

The combination likewise can not teach or suggest expedient casings in which the fibrous material reinforcing is self-supporting, as provided in newly added Claim 29.

Accordingly, Applicants respectfully submit that the claimed invention is patentable in light of US 782 and US 772, considered either alone or in any combination with the remaining art of record.

Claim 9 is likewise patentable in further view of US 580.

Applicants respectfully reiterate that US 580 is directed to extruded, cellulose-based food casings, particularly cellulose-based food casings obtained in an amine oxide process. [0017]. In the process, a solution of cellulose in a monohydrate of N-methyl-morpholine-N-oxide (NMMO) is prepared, a surface-modifying additive and an internal-structure-changing additive are added to the solution and the mixture is then shaped into a tubular casing. [0013 and 0027]. The surface-modifying additive may be selected from any of a generic list, including paraffin, and is present in amounts as low as 0.2 % by weight . [0014 and 0020] In contrast, the cellulose-based casings include at least 50% by weight of cellulose or cellulose derivatives. [0018] The cellulose-based casings may optionally be reinforced with "fiber paper." [0018 and 0039].

As correctly indicated by the Examiner, US 580 does not teach or suggest advantageous food casings incorporating a fibrous web having a weight of up to 400 g/m^2, as recited in Claim 9 as-amended. US 580 instead merely generically teaches optional reinforcement with "paper."

US 580, silent as to any cross-linking of its surface modifier, further does not teach or suggest such food casings incorporating coatings containing water-soluble protein and at least one compound which crosslinks the film-forming protein, as further recited in Claim 9.

US 580 likewise fails to teach or suggest advantageous casings in which the fibrous support web is formed from cotton fiber, viscose staple, silk, polyester, polyamide, polyolefin, polyvinyl acetate, polyacrylonitrile, polyvinyl chloride or mixtures or copolymers thereof, as recited in newly added Claim 28.

US 580 similarly fails to teach or suggest advantageous casings incorporating a flat fibrous material that is self-supporting and has a weight of 3 to 400 g/m^2, as recited in newly added Claim 29.

Accordingly, Applicants respectfully submit that Claim 9 and newly added Claim 28 and 29 are likewise patentable in light of US 580, considered either alone or in combination with the remaining art of record.

US 783 does not teach or suggest the claimed invention, as noted in the preceding remarks.

There would have been no motivation to have combined US 783 and US 580. However, even if US 783 and US 580 were combined (which Applicants did not), the claimed invention would not have resulted.

The combination, each directed to extruded films, do not teach or suggest the inventive food casing formed from a coated fibrous support web, as recited in Claim 9.

Nor does the combination of US 783 and US 580 teach or suggest advantageous food casings incorporating a fibrous web having a weight of up to 400 g/m^2, as kindly indicated by the Examiner and reflected in Claim 9 as-amended.

The combination likewise fails to teach or suggest advantageous casings in which the fibrous support web is formed from cotton fiber, viscose staple, silk, polyester, polyamide, polyolefin, polyvinyl acetate, polyacrylonitrile, polyvinyl chloride or mixtures or copolymers thereof, as recited in newly added Claim 28.

The combination similarly fails to teach or suggest advantageous casings incorporating a flat fibrous material that is self-supporting and has a weight of 3 to 400 g/m^2, as recited in newly added Claim 29.

Accordingly, Applicants respectfully submit that Claims 9, 28 and 29 are patentable in light of US 783 and US 580, considered either alone or in any combination with the remaining art of record.

Claim 18 is similarly patentable in further light of US 126.

US 126 is directed to self-coloring food casings, which may be formed from either cellulose or any of a number of synthetic polymers, with regenerated cellulose casings being preferred. (Col. 10, lines 18 - 38). US 126 generically notes that its casings may include a paper reinforcement. (Col. 4, lines 4 – 7). The casings of US 126 incorporate a transferable coating that contains a bixin colorant. (Col. 9, lines 8 – 11). The transferable colorant coating further includes a soluble film-forming agent selected from any of a generic list of materials, with cellulose ether preferred. (Col. 8, lines 16 – 23). US 126 expressly notes that moisture solubilizes the film forming agent, thereby releasing the bixin dye pigment during subsequent processing. (Col. 12, lines 55 - 62). In fact, the soluble film forming agent is noted on several occasions as performing a transfer/release function for the colorant. (Col. 13, line 65 – Col. 14, line 2). Applicants respectfully submit that the film forming agent thus remains soluble over the life of the casing to perform its required release of bixin.

As correctly indicated by the Examiner, US 126 does not teach or suggest advantageous food casings incorporating a fibrous web having a weight of up to 400 g/m^2, as recited in Claim 9 as-amended.

Nor does US 126 teach or suggest coatings containing either insoluble protein or water-soluble protein and at least one compound which crosslinks the water-soluble protein, as reflected in Claim 18. Applicants respectfully reiterate that to modify US 126 so as to eliminate the required solubility of the film former would render US 126 unfit for its intended purpose as a color transfer casing.

US 126 likewise fails to teach or suggest advantageous casings in which the fibrous support web is formed from cotton fiber, viscose staple, silk, polyester, polyamide, polyolefin, polyvinyl acetate, polyacrylonitrile, polyvinyl chloride or mixtures or copolymers thereof, as recited in newly added Claim 28.

US 126 similarly fails to teach or suggest advantageous casings incorporating a flat fibrous material that is self-supporting and has a weight of 3 to 400 g/m^2, as recited in newly added Claim 29.

Accordingly, Applicants respectfully submit that Claim 18 is likewise patentable in light of US 126, considered either alone or in combination with the remaining art of record.

US 783 does not teach or suggest the claimed invention, as noted in the preceding remarks.

There would have been no motivation to have combined US 783 and US 126. However, even if US 783 and US 126 were combined (which Applicants did not), the claimed invention would not have resulted.

The combination does not teach or suggest advantageous food casings incorporating a fibrous web having a weight of up to 400 g/m^2, as kindly indicated by the Examiner and recited in Claim 18 as-amended.

The combination also does not teach or suggest coatings containing either insoluble protein or water-soluble protein and at least one compound which crosslinks the water-soluble protein, as reflected in Claim 18.

The combination likewise fails to teach or suggest advantageous casings in which the fibrous support web is formed from cotton fiber, viscose staple, silk, polyester, polyamide, polyolefin, polyvinyl acetate, polyacrylonitrile, polyvinyl chloride or mixtures or copolymers thereof, as recited in newly added Claim 28.

The combination similarly fails to teach or suggest advantageous casings incorporating a flat fibrous material that is self-supporting and has a weight of 3 to 400 g/m^2, as recited in newly added Claim 29.

Accordingly, Applicants respectfully submit that Claims 18, 28 and 29 are likewise patentable in light of US 783 and US 126, considered either alone or in any combination with the remaining art of record.

CONCLUSION

It is respectfully submitted that Applicants have made a significant and important contribution to the art, which is neither disclosed nor suggested in the art. It is believed that all of pending Claims 1 through 4 and 6 through 29 are now in condition for immediate allowance. It is requested that the Examiner telephone the undersigned if any questions remain to expedite examination of this application.

It is not believed that extensions of time or fees are required, beyond those which may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time and/or fees are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required is hereby authorized to be charged to Deposit Account No. 50-2193.

Respectfully submitted,

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